



## DEFENSE INFORMATION SYSTEMS AGENCY

P. O. BOX 4502  
ARLINGTON, VIRGINIA 22204-4502

IN REPLY  
REFER TO: Joint Interoperability Test Command (JITE)

**16 Dec 08**

### MEMORANDUM FOR DISTRIBUTION

**SUBJECT:** Extension of the Special Interoperability Test Certification of Veraz I-Gate 4000 Edge with Software Version C 2.5.1.6\_ES

**References:** (a) DoD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004  
(b) CJCSI 6212.01D, "Interoperability and Supportability of Information Technology and National Security Systems," 8 March 2006  
(c) through (f), see Enclosure

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Veraz I-Gate 4000 Edge with Software Version C 2.5.1.6\_ES is hereinafter referred to as the System Under Test (SUT). The SUT met all of the interface and functional requirements and is certified for joint use within the Defense Switched Network (DSN). The SUT met the critical interoperability requirements for a Strategic Network Element (S-NE) as set forth in Appendix 9 of references (c) and (d) using test procedures derived from reference (e). No other configurations, features, or functions, except those cited within this report, are certified by the JITC, or authorized by the Program Management Office for use within the DSN. This certification expires upon changes that affect interoperability, but no later than three years from the date of the original memorandum (8 April 2008).

3. The extension of this certification is based upon a desktop review. The original certification is based on interoperability testing conducted by JITC and a review of the vendor's Letters of Compliance (LoC). Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 19 November through 14 December 2007 and documented in reference (f). Review of the vendor's LoC was completed on 14 December 2007. Validation of new S-NE latency requirements as set forth in Appendix 9 of reference (d) was completed on 22 February 2008. A desktop review was requested to include the SUT as a Tactical Network Element (T-NE). The desktop review request was approved on 12 November 2008. The SUT is certified for joint use within the DSN as a T-NE.

4. The SUT Interoperability Test Summary is shown in Table 1 and the Capability and Feature Requirements used to evaluate the interoperability of the SUT are indicated in Table 2.

**Table 1. SUT Interoperability Test Summary**

DSN Access Interfaces																																																															
Interface & Signaling	Critical	Status	Remarks																																																												
T1 CAS (AMI/SF) DTMF, MFR1	No <sup>1</sup>	Certified	Met all CRs and FRs.																																																												
T1 CAS (B8ZS/ESF) DTMF, MFR1	No <sup>1</sup>	Certified	Met all CRs and FRs.																																																												
T1 PRI (ANSI T1.607/T1.619a)	No <sup>1</sup>	Certified	Met all CRs and FRs.																																																												
T1 SS7 (ANSI T1.619a)	No <sup>1</sup>	Certified	Met all CRs and FRs.																																																												
E1 CAS (HDB3) DTMF, MFR1, DP	No <sup>1</sup> (Europe only)	Certified	Met all CRs and FRs.																																																												
E1 ISDN PRI (ITU-T Q.955.3)	No <sup>1</sup> (Europe only)	Certified	Met all CRs and FRs.																																																												
E1 SS7 (ANSI T1.619a)	No <sup>1</sup> (Europe only)	Certified	Met all CRs and FRs.																																																												
DSN Transport Interfaces																																																															
Transport Level	Critical	Status	Remarks																																																												
E1 (HDB3) Proprietary	No <sup>2</sup>	Certified	Met all CRs and FRs.																																																												
T1 (B8ZS/ESF) Proprietary	No <sup>2</sup>	Certified	Met all CRs and FRs.																																																												
100 Mbps Ethernet	No <sup>2</sup>	Certified	Met all CRs and FRs.																																																												
Features And Capabilities																																																															
Features And Capabilities	Critical	Status	Remarks																																																												
Synchronization	Yes	Certified	Met all CRs and FRs.																																																												
Network Management	Yes	Certified	Met all CRs and FRs.																																																												
Security	Yes	See note 3.	See note 3.																																																												
<b>NOTES:</b> 1 The GSCR does not stipulate a minimum Access interface requirement for a Strategic or Tactical Network Element. 2 The GSCR does not stipulate a minimum Transport interface requirement Strategic or Tactical Network Element. 3 Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report.																																																															
<b>LEGEND:</b> <table> <tr> <td>AMI</td><td>Alternate Mark Inversion</td> <td>ISDN</td><td>Integrated Services Digital Network</td> </tr> <tr> <td>ANSI</td><td>American National Standards Institute</td> <td>ITU-T</td><td>International Telecommunication Union – Telecommunication Standardization Sector</td> </tr> <tr> <td>B8ZS</td><td>Bipolar Eight Zero Substitution</td> <td>Mbps</td><td>Megabits per second</td> </tr> <tr> <td>CAS</td><td>Channel Associated Signaling</td> <td>MFR1</td><td>Multi-Frequency Recommendation 1</td> </tr> <tr> <td>CRs</td><td>Capability Requirements</td> <td>MLPP</td><td>Multi-Level Precedence and Preemption</td> </tr> <tr> <td>DISA</td><td>Defense Information Systems Agency</td> <td>PRI</td><td>Primary Rate Interface</td> </tr> <tr> <td>DP</td><td>Dial Pulse</td> <td>Q.955.3</td><td>ISDN Signaling Standard for E1 MLPP</td> </tr> <tr> <td>DSN</td><td>Defense Switched Network</td> <td>SF</td><td>Super Frame</td> </tr> <tr> <td>DSS1</td><td>Digital Subscriber Signaling 1</td> <td>SS7</td><td>Signaling System 7</td> </tr> <tr> <td>DTMF</td><td>Dual Tone Multi-Frequency</td> <td>SUT</td><td>System Under Test</td> </tr> <tr> <td>E1</td><td>European Basic Multiplex Rate (2.048 Mbps)</td> <td>T1</td><td>Digital Transmission Link Level 1 (1.544 Mbps)</td> </tr> <tr> <td>ESF</td><td>Extended Super Frame</td> <td>T1.607</td><td>ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1</td> </tr> <tr> <td>FRs</td><td>Feature Requirements</td> <td>T1.619a</td><td>SS7 and ISDN MLPP Signaling Standard for T1</td> </tr> <tr> <td>GSCR</td><td>Generic Switching Center Requirements</td> <td></td><td></td> </tr> <tr> <td>HDB3</td><td>High Density Bipolar 3</td> <td></td><td></td> </tr> </table>				AMI	Alternate Mark Inversion	ISDN	Integrated Services Digital Network	ANSI	American National Standards Institute	ITU-T	International Telecommunication Union – Telecommunication Standardization Sector	B8ZS	Bipolar Eight Zero Substitution	Mbps	Megabits per second	CAS	Channel Associated Signaling	MFR1	Multi-Frequency Recommendation 1	CRs	Capability Requirements	MLPP	Multi-Level Precedence and Preemption	DISA	Defense Information Systems Agency	PRI	Primary Rate Interface	DP	Dial Pulse	Q.955.3	ISDN Signaling Standard for E1 MLPP	DSN	Defense Switched Network	SF	Super Frame	DSS1	Digital Subscriber Signaling 1	SS7	Signaling System 7	DTMF	Dual Tone Multi-Frequency	SUT	System Under Test	E1	European Basic Multiplex Rate (2.048 Mbps)	T1	Digital Transmission Link Level 1 (1.544 Mbps)	ESF	Extended Super Frame	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1	FRs	Feature Requirements	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1	GSCR	Generic Switching Center Requirements			HDB3	High Density Bipolar 3		
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**Table 2. SUT Capability and Feature Interoperability Requirements**

DSN Interfaces			
DSN Access Interfaces		Requirements Required or Conditional (See note 1.)	References
Interface	Critical	<ul style="list-style-type: none"><li>• DS1 Interface Characteristics (C)</li><li>• DS1 Supervisory Channel Associated Signaling (C)</li><li>• DS1 Clear Channel Capability (C)</li><li>• DS1 Alarm and Restoral Requirements (C)</li><li>• E1 Interface Characteristics (C)</li><li>• E1 Supervisory Channel Associated Signaling (C)</li><li>• E1 Clear Channel Capability (C)</li><li>• E1 Alarm and Restoral Requirements (C)</li><li>• MOS (R)</li><li>• BERT (R)</li><li>• Secure Transmission (Voice and Data) (R)</li><li>• Modem (R)</li><li>• Facsimile (R)</li><li>• Call Control Signals (R)</li><li>• Call Congestion (R)</li><li>• Voice Compression (C)</li><li>• IP Interface (C)<ul style="list-style-type: none"><li>- Delay (R)</li><li>- Jitter (R)</li><li>- Packet Loss (R)</li></ul></li><li>• <b>Random Bit Error Rate of 1x10<sup>-5</sup> (R)</b></li><li>• <b>One-way delay of 300 milliseconds per link (R)</b></li><li>• <b>Voice calls shall support a minimum MOS of 3.6 or better over any five-minute interval (R)</b></li><li>• <b>End-to-end Bit error rate shall not degrade by more than 0.03% over an eight-hour period (not including Forward Error Correction) (R)</b></li><li>• <b>Minimum modem transmission speed of 2.4 kbps (R)</b></li></ul>	<ul style="list-style-type: none"><li>• GSCR para. A9.5.1.2.4</li><li>• GSCR para. A9.5.1.2.4</li><li>• GSCR para. A9.5.1.2.4</li><li>• GSCR para. A9.5.1.2.4</li><li>• GSCR para. A9.5.1.2.5</li><li>• GSCR para. A9.5.1.2.5</li><li>• GSCR para. A9.5.1.2.5</li><li>• GSCR para. A9.5.1.2.5</li><li>• GSCR para. A9.5.1.1</li><li>• GSCR para. A9.5.1.1</li><li>• GSCR para. A9.5.1.1</li><li>• GSCR para. A9.5.1.1</li><li>• GSCR para. A9.5.1.1</li><li>• GSCR para. A9.5.1.1.4</li><li>• GSCR para. A9.5.1.2.9</li><li>• UCR para. A9.5.1.2.9a</li><li>• GSCR para. A9.5.1.2.9b</li><li>• GSCR para. A9.5.1.2.9c</li><li>• <b>GSCR para. A2.5.3.1</b></li><li>• <b>GSCR para. A2.5.3.1</b></li><li>• <b>GSCR para. A2.5.3.1</b></li><li>• <b>GSCR para. A2.5.3.1</b></li></ul>
T1 CAS	No <sup>2</sup>		
T1 SS7 (ANSI T1.619a)	No <sup>2</sup>		
T1 ISDN PRI (ANSI T1.607/ANSI T1.619a)	No <sup>2</sup>		
E1 ISDN PRI (ITU-T Q.955.3)	No <sup>2</sup> (Europe only)		
E1 CAS	No <sup>2</sup> (Europe only)		
E1 SS7 (ANSI T1.619a)	No <sup>2</sup> (Europe only)		
DSN Transport Interfaces			
Interface	Critical		
E1 (HDB3) Proprietary	No <sup>3</sup>		
T1 (B8ZS/ESF) Proprietary	No <sup>3</sup>		
100 Mbps Ethernet	No <sup>3</sup>		
SUT Features And Capabilities			
Feature/Capability	Critical	Requirements Required or Conditional	References
Synchronization	Yes	<ul style="list-style-type: none"><li>• Timing (R)</li></ul>	<ul style="list-style-type: none"><li>• GSCR para. A9.5.1.2.7</li></ul>
Network Management	Yes	<ul style="list-style-type: none"><li>• Management Option (R)<ul style="list-style-type: none"><li>- Local Management (Front Panel and/or External Console) (C)</li><li>- ADIMSS (C)</li></ul></li><li>• Fault Management (C)</li><li>• Loop Back Capability (C)</li><li>• Operational Configuration Restoral (R)</li></ul>	<ul style="list-style-type: none"><li>• GSCR para. A9.5.2.2</li><li>• GSCR para. A9.5.2.3</li><li>• GSCR para. A9.5.3</li></ul>
Security	Yes	<ul style="list-style-type: none"><li>• DIACAP (replacement for DITSCAP) (R)</li></ul>	<ul style="list-style-type: none"><li>• GSCR para. A9.6</li></ul>
<b>NOTES:</b>			
1 The bolded requirements are the additional requirements for the Tactical Network Element. All other requirements are identical for a Strategic or Tactical Network Element.			
2 The GSCR does not stipulate a minimum Access interface requirement for a Strategic or Tactical Network Element.			
3 The GSCR does not stipulate a minimum Transport interface requirement for a Strategic or Tactical Network Element.			

**Table 2. SUT Capability and Feature Interoperability Requirements (continued)**

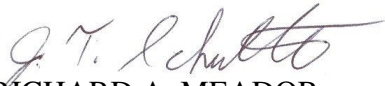
<b>LEGEND:</b>			
A	Appendix	IP	Internet Protocol
ADIMSS	Advanced DSN Integrated Management Support System	ISDN	Integrated Services Digital Network
ANSI	American National Standards Institute	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
B8ZS	Bipolar Eight Zero Substitution	kbps	kilobits per second
BERT	Bit Error Rate Test	Mbps	Megabits per second
C	Conditional	MLPP	Multi-Level Precedence and Preemption
CAS	Channel Associated Signaling	MOS	Mean Opinion Score
DIACAP	DoD Information Assurance Certification and Accreditation Process	para	paragraph
DITSCAP	DoD Information Technology Security Certification and Accreditation Process	PRI	Primary Rate Interface
DoD	Department of Defense	Q.955.3	ISDN Signaling standard for E1 MLPP
DS1	Digital Signal Level 1	R	Required
DSN	Defense Switched Network	SS7	Signaling System 7
DSS1	Digital Subscriber Signaling 1	SUT	System Under Test
E1	European Basic Multiplex Rate (2.048 Mbps)	T1	Digital Transmission Link Level 1 (1.544 Mbps)
ESF	Extended Super Frame	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
GSCR	Generic Switching Center Requirement	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
HDB3	High Density Bipolar 3	UCR	Unified Capabilities Requirements

5. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/.gov users on the NIPRNet at <https://stp.fhu.disa.mil>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125> (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at <http://jitc.fhu.disa.mil/tssi>.

6. The JITC point of contact is Mr. Joseph Roby, DSN 879-0507, commercial (520) 538-0507, FAX DSN 879-4347, or e-mail to [joseph.robby@disa.mil](mailto:joseph.robby@disa.mil). The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0713001.

FOR THE COMMANDER:

Enclosures a/s

  
for **RICHARD A. MEADOR**  
Chief  
Battlespace Communications Portfolio

JITC Memo, JTE, Extension of the Special Interoperability Test Certification of Veraz I-Gate  
4000 Edge with Software Version C 2.5.1.6\_ES

Distribution (electronic mail):

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Joint Interoperability Test Command, Liaison, TE3/JT1

Office of Chief of Naval Operations, CNO N6F2

Headquarters U.S. Air Force, Office of Warfighting Integration & CIO, AF/XCIN (A6N)

Department of the Army, Office of the Secretary of the Army, DA-OSA CIO/G-6 ASA (ALT),  
SAIS-IOQ

U.S. Marine Corps MARCORSYSCOM, SIAT, MJI Division I

DOT&E, Net-Centric Systems and Naval Warfare

U.S. Coast Guard, CG-64

Defense Intelligence Agency

National Security Agency, DT

Defense Information Systems Agency, TEMC

Office of Assistant Secretary of Defense (NII)/DOD CIO

U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities  
Division, J68

Defense Information Systems Agency, GS23

## **ADDITIONAL REFERENCES**

- (c) Defense Information Systems Agency, "Department of Defense Voice Networks Generic Switching Center Requirements (GSCR), Errata Change 2," 14 December 2006, Revised 27 March 2007
- (d) Department of Defense, "Department of Defense Networks, Unified Capabilities Requirements," 21 December 2007
- (e) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (f) Joint Interoperability Test Command, Memo, JTE, "Special Interoperability Test Certification of Veraz I-Gate 4000 Edge with Software Version C 2.5.1.6\_ES," 8 April 2008